

ABSTRACT OF THE DISCLOSURE

1 An objective for a microlithography projection
2 system has at least one fluoride crystal lens. The effects
3 of birefringence, which are detrimental to the image
4 quality, are reduced if the lens axis of the crystal lens
5 is oriented substantially perpendicular to the {100}-planes
6 or {100}-equivalent crystallographic planes of the fluoride
7 crystal. If two or more fluoride crystal lenses are used,
8 they should have lens axes oriented in the (100)-, (111)-,
9 or (110)-direction of the crystallographic structure, and
10 they should be oriented at rotated positions relative to
11 each other. The birefringence-related effects are further
12 reduced by using groups of mutually rotated (100)-lenses in
13 combination with groups of mutually rotated (111)- or
14 (110)-lenses. A further improvement is also achieved by
15 applying a compensation coating to at least one optical
16 element of the objective.

(Fig. 1)